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turning out 30,000 motorcycles and nearly that many television sets each month. They show that 50% more West Germans have radio sets than before the war, and that nearly 3,000 miles of special trackways are being built to accommodate Germany's 15 million cyclists.

The Federal Republic of Germany (West Germany) comprises only those areas that made up the occupation zones of the United States, Britain, and France. It contains only a little more than half of what was prewar Germany. The rest of Germany lies in Russia's occupation zone or is incorporated bodily into the Soviet Union and Poland.

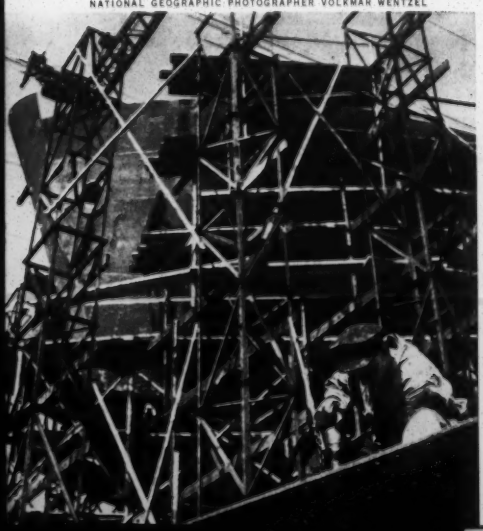
Production would mean little without markets, and foreign markets are necessary to Germany to balance the cost of food and raw materials it must import. To this end Germany is sending hundreds of "industrial missionaries" into little-developed areas where needs exist for machinery, tools, automobiles, chemicals, precision instruments, optical products, and know-how. In neutral countries fearful of taking sides in the cold war by dealing with either Russia or the United States, German trade barons are welcome.

Probably the greatest single element in German recovery, and certainly the one everywhere most visible, has been the mighty building bee in progress over the past six years. The war destroyed or heavily damaged no fewer than five million dwellings in West Germany—fully 40% of all homes. Roofs were the most immediate postwar need.

At first the problem was tackled on an individual basis. Families moved into air-raid shelters, prison camp barracks, cellars, summer shacks, barns, anywhere to escape the rain and wind. All available hands were put to clearing rubble. (And it is calculated that the bomb rubble at war's end in Germany amounted to something like 14½ billion cubic feet—including 17 billion unbroken bricks that were cleaned and re-used.)

Then German organization was applied. The Federal government, the State governments, insurance companies, trade unions, refugee groups, and just plain "societies of home seekers" organized the building of communities across the breadth of the land.

So many homes have already been completed that the density-per-room—despite the fact that refugees have swollen the population by nearly 30%—in West Germany today is only slightly more than before a single World War II bomb had fallen on the country.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With population increased to some 50 million by nearly 11 million uprooted persons from the communist East, West Germany has built more than 2,000,000 houses or apartments since currency reform took effect in June, 1948. A quarter of these have been constructed especially for refugees and expellees from the East.

Rebuilt from War's Rusting Wreckage, Hamburg's shipyards set an all-time record in 1954—920,000 gross tons down the ways.

Report from Germany, 10 Years After

Only 10 years ago Germany lay in ruins, victim of total defeat in a total war. Cities were rubble, industries at a standstill. The blast furnaces of the Ruhr were cold. Millions lived in roofless or partly wrecked homes, others in no homes at all. Freighters stayed in their berths, inactive from bomb damage or lack of cargo. Trains ran fitfully, hampered by felled bridges which also tied up river and canal traffic.

Prophets of doom said that not in 25 years could Germany regain the economic position it held in 1939. But now, less than a decade later, West Germany has become one of Europe's most prosperous countries. The Ruhr again is a great workshop of the world (illustration, below). It and other industrial areas make West Germany the first industrial power of Europe, the world's second ship-builder, a leading merchant mariner.

The facts of West German recovery read almost like a statistical fairy tale. In the past four years alone, using 1936 market prices as a constant, the gross national product has risen nearly 50%. Industrial production has climbed to nearly twice that of 1936 (the last "normal" prewar year).

Exports during 1954 approximated 22 billion marks, a full two billion more than imports. Of these exports, half a billion were from sales of machine tools; a quarter of a billion from the *Volkswagen* (People's Car) that Hitler promised but never built; 100 million from toys.

"In terms of real wages," says an economist at Bonn, the capital, "we calculate that the average German worker has just about twice as much purchasing power today as he had six and one-half years ago. His caloric intake has increased 26% in the same period, although he is eating no better than in 1935-38. The amount of money he can spend on goods and personal services is up nearly 50% over 1948, and about 10% higher than before World War II."

Other figures show that German industry is

The Reborn Ruhr Means a Filled Pay Envelope for Hans

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Beacon Hill Enshrines Boston's Past

Should the overpowering urge seize him, any resident of Boston's Beacon Hill can safely lead a cow across Beacon Street to the Common without fear of arrest.

This happy immunity is as old as Boston Common itself. Like other Beacon Hill traditions, it is jealously guarded today. The Common was originally a cow pasture, bought by the first Bostonians from Rev. William Blackstone, that solitary settler who, in the early 1620's, moved onto the future site of Boston and built the first house on Beacon Hill.

Blackstone's privacy ended in 1630 when John Winthrop and his colonists settled at Charlestown, across the Charles River. The newcomers found water scarce. Blackstone invited them to cross over and share his excellent spring. So Boston was born, named after the English town many of Winthrop's settlers hailed from. One of the new town's first features was its hilltop beacon, to be lighted as a warning of danger.

Since then, Beacon Hill has lost its beacon and, after having its top leveled, hardly ranks as a hill. But it remains a proud symbol of old Boston, rich in history, literary tradition, and legend. "The Hill" looks much as it did in the early 19th century. Some streets remain cobbled. Rows of rose-brick houses with lavender windowpanes, white doors, and shining brass form a quiet oasis in the modern metropolis.

The Hill's great literary figures made it a fountainhead of American 19th-century culture. Louisa May Alcott, beloved for her "Little Women," resided there, as did Oliver Wendell Holmes, who saved the frigate "Constitution" with his stirring poem, "Old Ironsides." The home of Thomas Bailey Aldrich, author of "The Story of a Bad Boy," is still occupied by his family. Soprano Jenny Lind was married in a house on Louisburg Square. Historian Francis Parkman, and Julia Ward Howe, who wrote "The Battle Hymn of the Republic," trod the same irregular brick sidewalks that climb the hill today.

To preserve the famous quarter, homeowners have asked their legislature to create a Historic Beacon Hill District where new construction would be regulated. They want to maintain the unusual architectural unity of their homes, many of which were designed by one man, Bostonian Charles Bulfinch, and built in the halcyon decades following the Revolution. State House crowns Beacon Hill, so the project is of immediate interest to the Commonwealth's legislators. The gilt-domed capitol stands on the former pasture of John Hancock, first signer of the Declaration of Independence.

References—"Boston Through Midwest Eyes," *National Geographic Magazine*, July, 1936; "Founders of New England," June, 1953; "Literary Landmarks of Massachusetts," Mar., 1950.

ENRIQUE C. CANOVA, NATIONAL GEOGRAPHIC STAFF

Youngsters Frolic on a Skating Pond Overlooked by Beacon Hill

Dr. Viktor E. Preusker, the Federal Minister for Housing, proudly boasts that more homes have been built in the six years since 1948 than in all the 20 years between the two world wars. In 1954 alone, 550,000 dwellings were constructed—at the rate of one housing unit completed almost every minute!

"At the end of the war," he said, "no one would have dared even to guess the date when our housing problem might be solved. Now it's a subject for discussion whether my Ministry itself won't have become superfluous by 1958."

If these statistics have a feel of American bigness about them, it may be not entirely accidental. In West Germany—the American zone in particular—everyone from United States High Commissioner to lowliest GI has imparted a bit of American flavor to the land he is temporarily occupying. Switch on your radio and you hear in German, "Carry Me Back to Old Virginny," that's where the "tree wool"—*Baumwolle* (cotton) —grows.

German boys wear cowboy suits, read western comics, build soapbox coasting cars, and contribute to the Pfennig Parade (German March of Dimes). In areas where American troops are stationed, highway travelers stop at the "Dine-a-Mite Snack Bar" and the German waitress calls back the order—"*Zwei* hamburger *mit* French fries."

References—Germany appears on the National Geographic Society's map of Western Europe. Write the Society, Washington 6, D. C., for a map price list. "With Uncle Sam and John Bull in Germany," *National Geographic Magazine*, Jan., 1949; "Uncle Sam Bends a Twig in Germany," Oct., 1948; "What I Saw Across the Rhine," Jan., 1947; GEOGRAPHIC SCHOOL BULLETINS, Oct. 26, 1953, "Hamburg Resumes Role in World of Commerce"; Feb. 1, 1954, "War-Damaged Berlin Is Making a Comeback." *School and library discount price for Magazine issues a year old or less, 50¢; through 1946, 65¢. Write for prices of earlier issues.*

Making Hay on Lake Constance—This important crop helps keep West Germany self-sufficient in meat and dairy products. Bumper crops of potatoes and sugar beets add to the national larder, but most food grains and edible oils and fats must be imported. The Iron Curtain separates West Germany's growing millions from rich eastern farmlands and, compounding the food problem, new hundreds of refugees from the communist East stream in every day.

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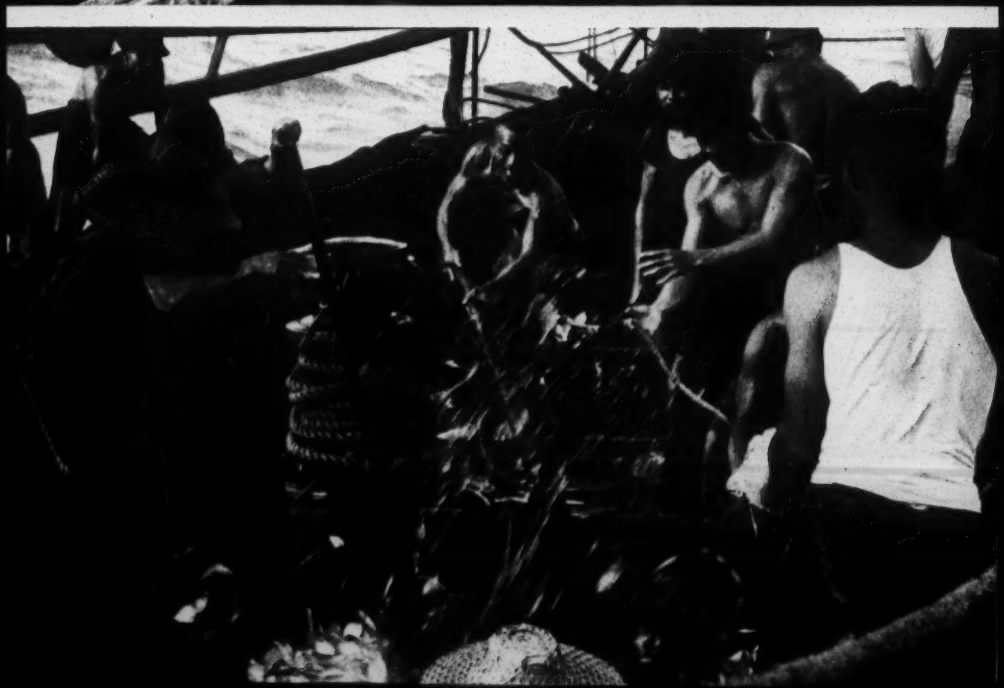
the matting sails, all hands heave at the windlass. The great net is drawn alongside, mouth closed tight, a squirming mass of fish trapped inside.

Crewmen lower a dip net into the trawl, raise it to shower bushels of fish into a rectangular trough on deck (bottom).

From the two-ton catch, worthless puffers are tossed back; flavorsome sea bream and golden thread are iced; squid, shark, toadfish—Chinese delicacies—are split and dried on deck; other fish salted down.

PHOTOGRAPHS BY J. CHARLES THOMPSON



UMI

Trawling the China Seas

In choppy seas off Hong Kong, the fishing junk *Ming Lee* ducks her spray-drenched head. Galleon-like stern soars as she plunges ahead under shortened sail.

For untold centuries mariners have braved the typhoon-swept China Seas to harvest food from the deep. Today's Chinese sailors fare forth on the same quest in junks of unchanged design. The *Ming Lee*'s home port: Hong Kong, Britain's Crown Colony on Red China's coast. Her fishing technique: towing a trawl, or dragnet, that scoops fish into its yawning mouth far beneath the surface.

Shouts ring out above the creaking of the rigging. A boat is lowered. Men strain against the paddles as they take a line from junk to trawl.

All day *Ming Lee* drags the sea. Toward evening, as sunset reddens the matting sails, all hands heave at the windlass. The great net is

The Slavic version of Huck Finn, gliding downstream on his long raft, lacks the freedom of his American counterpart. As he meets boats emerging from the Moscow Canal, he hopes someday a government-approved bill of lading will take him to his capital with its shops and theaters, its Red Square under the brooding Kremlin walls.

Farther downriver, he slips post Gorki—formerly called Nizhni Novgorod, his older comrades tell him—once famed for its trade fair where Asia met Europe. Now the old fair grounds are forgotten in a forest of factory chimneys. Cars and trucks roll from booming Gorki's assembly lines.

UMI

MAYNARD OWEN WILLIAMS

The Volga of the Tsars and of the Commissars Blends in Timeless Kuibyshev (Samara)

Rivers of the World: No. 6

The Volga: Russia's Little Mother

Today's Volga boatman is no bare-chested human mule, straining on the tow rope as he hauls a barge upstream. Instead, he's apt to be a deck hand on one of the steel-hulled sidewheelers that surge through the slow brown current of Russia's Mississippi.

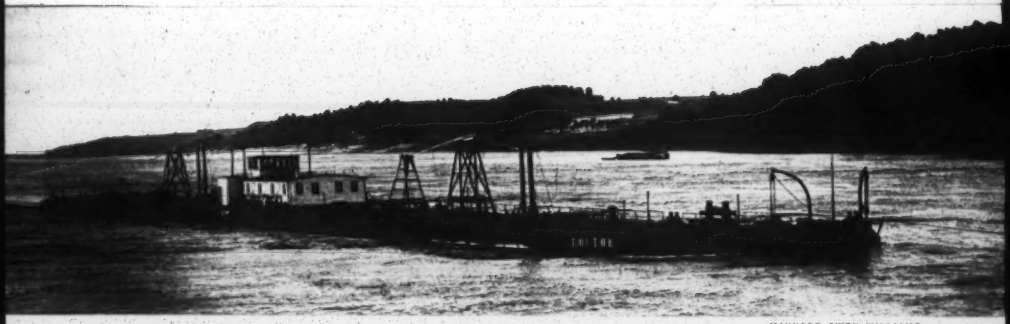
In the past half century, Europe's longest river has been blocked by massive dams, prodded through canals, despoiled by refuse from new industries, and churned by the Diesel engines of modern vessels. It remains Russia's winding Main Street—2,290 miles of waterway, threading through the flat, productive heartland of the nation.

With its canal system, the Volga now serves nearly the whole of European U.S.S.R. To Leningrad, world port on the Gulf of Finland, inland goods come by means of canal-connected lakes. A new link with the Don River gives access to the Black Sea and Mediterranean. Moscow itself boasts an 80-mile canal which makes it "The Port of the Five Seas," meaning the Baltic, White, Black, Caspian, and Azov.

At their father's knee, Russian children learn how Little Mother Volga (Matushka Volga) trickles from a spring beneath a ruined chapel in the bleak Valdai Hills, halfway between Russia's two largest cities. In its northern region the stream sleeps under ice nearly half the year. When thaw comes, it awakes to begin its job of commerce.

Timber from this forested northland floats down the Volga in long, crude rafts, each with its shanty perched on the logs. Families travel, Huckleberry Finn style, downriver to the dry plains around the Caspian Sea where wood is in demand. There the floating homes are broken up and sold; raftsmen board boats and join upstream traffic.

"Traffic" is the right word in this twice-Texas size basin. From the Caspian to Moscow, the Volga system seethes with commerce, supplementing a network of indifferent highways and railroads. Tugs grind upstream from Baku on the Caspian Sea, towing barges nearly awash with their cargo of oil. Other floating freight trains carry grain or salt from Caspian ports, fish from Astrakhan on the Volga's 200-mouth delta, or iron ore from the Ural Mountains, by way of the river Kama. Only ice or low water restrict the movement of vessels.



MAYNARD OWEN WILLIAMS

Baku Oil for Moscow—Mother Volga laps the deck of a deep-laden barge from the Caspian fields that supply most of the Soviet Union's oil.

it has remained *their* river, once and forever, as Hitler and Napoleon learned.

"To know the soul of the Russian people, you must take a trip on the Volga," an old proverb says. The trouble is, nowadays, hardly anyone but a Russian can do it.

References—The Volga appears on the Society's map of Europe and the Near East. "Mother Volga Defends Her Own," *National Geographic Magazine*, Dec., 1942 (out of print, refer to your library); "Voyaging on the Volga Amid War and Revolution," Mar., 1918.

Modern Cave Men Probe Earth's Deep Secrets

"Hey, Steve! Come on down!"

Flashlight in one hand, grabbing a fingerhold with the other, Steve wriggles through a rock crevice in California's Sierra Nevada Mountains and disappears underground.

Steve is but one of many Americans whose week-end hobby is to don knapsack and spiked boots, take rope coil and lamp, and set out to discover at first hand what lies hidden below the earth's surface. Some 2,000 cave men and women have their own National Speleological Society. They call themselves "spelunkers" from the Roman word *speluncae*, meaning caves. Steve's own group includes a book dealer, an engineer, minister, grocer, reporter, secretary, and—believe it or not—an undertaker.

RUSSELL WESTWOOD, MAGNUM

By the end of a day's exploration, Steve's clothes are torn, his body bruised, exhausted. He has clambered down sheer rock walls, waded to his chin in underground streams, crawled into tiny openings. Once he got stuck and had to be pulled out by his feet.

Why do enthusiasts from all over the world gladly endure this physical punishment? Adventure—the same spirit that took man to the summit of Mount Everest—is one answer. This past year two French explorers made a record 2,485-foot descent into the Berger Caverns near Grenoble. Seventeen Italian

Spelunker Appetites Are Cavernous—An adventuring cave woman heats soup for her hungry companions.

"Huck Finnski" rounds the Samara Bend, a 100-mile hairpin turn that brings the river back to within 13 miles of itself. Here, hills punctuate the flat, drab-green steppe. The river chews into the limestone cliff of the right bank. The left bank slopes gently upward, grey and dull, a vast plain dotted with trees. At Kuibyshev, where onion-shaped domes of churches mingle with starkly modern apartment houses, Huck bypasses the almost completed two-mile dam which will run what is reported to be the world's largest hydroelectric power plant.

MAYNARD OWEN WILLIAMS

Fried Fish for Sale—A Karakul-hatted vendor greets riverboat passengers as they disembark for a brief stop along the lower Volga.

And at Stalingrad, risen from its own ashes since its destruction by Hitler's Panzers in World War II, he sees a similar dam being built—one in the series planned to wrench a colossal 30 billion kilowatt-hours a year from the river and increase its navigability.

The raftsman might be tempted to explore the 62-mile canal which hoists vessels up through 13 locks to the Don River. Instead, he drops downstream towards the Caspian where he sees work beginning on the Turkmenian Canal. This will bring water through the desert from the Aral Sea to help restore the level of the receding Caspian (already about 100 feet below sea level).

No trees grow on the arid steppe of the lower Volga except those which have been planted in long rows to check wind erosion and conserve the water that gushes through irrigation channels. This semidesert is in sharp contrast to fertile, well-watered farms of the upper river.

With all her face lifting, Matushka Volga retains much of her legendary character. Double-ended skiffs still weave through river traffic like startled pedestrians. They are loaded to the gunwales with cucumbers, raspberries, tomatoes, and apricots to be sold at the tumble-down landing stages. Fourth class river boat passengers—Great Russians, Ukrainians, Tatars, and Cossacks—scurry ashore to buy this produce when the sidewheelers dock, then race back aboard so they won't lose the standing room their tickets provide.

Astrakhan's fish merchants display six-foot sturgeons, laden with caviar. East meets West in this crossroads delta city which gave its name to the rough cloth and round hats made from the curled fur of Karakul lambs. Bactrian camels from the Kalmuck steppes still bring sacks of grain draped over their double humps for shipment upriver.

Slavic peoples spent two centuries winning the Volga from the "Golden Horde"—the remnants of Genghis Khan's conquering Mongols. Since,

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Pool in English Cave Reveals Hidden Mysteries

spelunkers penetrated over 2,070 feet in the Preta cave, north of Verona.

Then there's the thrill of discovery. In 1901, a startled New Mexico cowboy investigated a cloud of bats spiraling from the ground, and found the Carlsbad Caverns—world's largest. A Kentucky hunter tracked a wounded bear into Mammoth Cave, 150 miles of fabulous rock formations. In France, as recently as 1946, two boys followed their dog into a rocky fissure that led to Lascaux Cave. Colored pictures drawn on its walls 20,000 years ago by Cro-Magnon artists opened a new chapter in prehistory.

Spelunkers have discovered life in this underground world — not only the millions of bats, the salamanders and spiders, but unique sightless fish. In New Zealand's Waitomo Caves, subterranean streams glow in the dark from the floating larvae of a small fly found nowhere else.

Spelunking is a valuable scientific hobby, an engrossing sport—but dangerous. French explorer Marcel Loubens lost his life in August, 1952, in the caves of Pierre Saint-Martin in the Pyrenees. The cable lifting him up the 1,169-foot shaft broke, hurtling him 135 feet to his death. Explorers have been trapped inside caves when a sudden rain turned an underground trickle into a roaring torrent.

But so long as there are caves to explore the lure remains for scientist and sportsman. Ask Steve. He'll tell you the discovery of glorious crystal stalagmites and stalactites brought from the darkness by his flashlight beam is reward enough.

References—"Carlsbad Caverns in Color," *National Geographic Magazine*, Oct., 1953; "Probing Ice Caves of the Pyrenees," Mar., 1953; "Lascaux Cave, Cradle of World Art," Dec., 1948. GEOGRAPHIC SCHOOL BULLETINS, published weekly during school year—30 issues. Rates: U. S., 75¢; Canada, $1.00; elsewhere, $1.25. U. S. ONLY—40 issues $1.00. Subscriptions entered now start with current issue. Order from: School Service Division, National Geographic Society, Washington 6, D. C.

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